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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/437,607	11/10/1999	RUFUS L. CHANEY	1797.0090005	8216

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EXAMINER

IBRAHIM, MEDINA AHMED

ART UNIT PAPER NUMBER

1638

DATE MAILED: 05/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/437,607

Applicant(s)

CHANEY ET AL.

Examiner

Medina A. Ibrahim

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1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 8-18, 38-40, 48, 49 and 54-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-18, 38-40, 48-49, and 54-60 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Applicant's response filed 02/13/06 in reply to the Office action mailed 10/12/05 has been entered. The declaration of Jay Nelkin of 02/13/06 has been considered.

All previous objections and rejections not set forth below have been withdrawn in view of Applicant's amendment to the claims or arguments.

Claims 1-4, 8-18, 38-40, 48-49, and 54-60 are pending and are examined.

New Matter

Claims 1-4, 8-18, and 38-40, 48, 54 and 60 remain rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This rejection is repeated for the reasons of record as set forth in the last Office action of 10/12/05. Applicant's arguments filed 02/13/06 have been considered but are not deemed persuasive.

Applicant argues that disclosure as originally filed provides support for a pH of about 5.5 to 7.0 and more alkaline. Applicant asserts that "more alkaline" pH includes a pH of 9.5. Applicant points to page 8, lines 18-20 and 23-24 of the specification for support.

This is not found persuasive because neither the specification nor the claims as originally filed recite the pH range of 5.9 to 9.5. While the examiner recognizes that an

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alkaline pH includes 7.2 to 9.5, the instant specification provides no support for the specific range as recited in the claims. On page of the specification , lines 16-23, the preferred soil pH for nickel ranges from 6.3 to 6.7, but when the iron oxide level in the soil is low, a more alkaline pH may be used. For cobalt, the preferred pH ranges from 5.5 to 7. Table1 on pages 21-22, the soil pH varies from 4.84 to 6.54, while in Tables 2 and 3, the soil pH ranges from 4.99 to 5.57. Nowhere in the specification as originally filed is mentioned the pH range of 5.6 to 9.5. Therefore, the limitation of soil pH from above 5.6 to 9.5 is considered a new matter. Applicant is required to delete the New Matter in response to this Office action, as stated in the last Office action. See MPEP 2163.05. See also *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976) and *Purdue Pharma L.P. v. Faulding Inc.*, 230 F.3d 1320, 1328, 56 USPQ2d 1481, 1487 (Fed. Cir. 2000), as stated in the last Office action.

Claim Rejections - 35 USC § 112

Claims 1-4, 8-9, 48-49, and 54-60 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of selectively increasing the amount of Ni recovered from metal containing soil by adjusting the pH of the soil from an initial pH to a raised pH of at least 7.0, and cultivating in the soil a Ni-hyperaccumulator plant, does not reasonably provide enablement for the use of a cobalt-hyperaccumulator plant in said method at soil pH range of 5.6 to 9.5. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims. This rejection is repeated for the reasons of record as set forth

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in the last Office action of 10/12/05. Applicant's arguments filed 02/13/06 have been considered but are not deemed persuasive.

Applicant argues that the specification discloses a large number of Ni and Co-metal hyperaccumulators that are suitable in the claimed methods of selectively increasing the amount of at least metal recovered from metal contaminated soil. Applicant asserts that one of ordinary skill in the art can easily identify metal hyperaccumulators, adjust soil pH and cultivate at least one of said identified hyperaccumulator plants or at least one of the metal hyperaccumualtor plants listed on pages 10-17 of the specification (response, p. 3).

This is not found persuasive because the rejection is not based on whether one of ordinary skill in the art can adjust soil pH to a higher level and cultivate a Ni, Co or Mn-hyperaccumulator plant in said soil for metal recovery. The claims are rejected because the specification is not enabling for a method of increasing the amount of at least one metal recovered from a metal containing soil by adjusting the pH of the soil from an initial pH to a raised pH of 5.6 to 9.5 and cultivating a Mn or Co-hyperaccumulator in said soil. The specification does not teach that metal recovery can be increased in Co- or Mn hyperaccumulators at soil pH from initial to a raised pH of 5.6 to 9.5. Tables 1-3 of the specification show that adjusting the soil from an initial pH to an increased soil pH of 6.0 actually decreases the accumulation of cobalt and manganese in plant tissues. In Table 1, the metal hyperaccumulator of *Alyssum murale* grown on soils of pH 6.0, for example, accumulated far greater amounts of nickel than the plants grown on soils of pH 4.5. In addition, plants taking up larger amounts of nickel at soil pH 6.0 accumulated smaller amounts of other metals such as cobalt, manganese. Similar results are also shown in Tables 2-4. Therefore, adjusting the soil pH to at least 5.6 to 9.5, is not expected to recover increased amount of cobalt and manganese. Therefore, claims drawn to a method for selectively increasing the amount of metal recovered by adjusting soil pH from an initial pH to an increased pH of at least 5.6 to 9.5 and cultivating Co or Mg-hyperaccumulating plants are not supported by an enabling disclosure.

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The declaration of Jay Nelkin has been considered but is not found persuasive because the declaration does not support for the pH range of 5.6 to 9.5 as recited in the claims. The declaration does not provide enablement support for recovering increased amount of cobalt or manganese using the soil pH of from initial pH to a raised pH of 5.6 to 9.5 using a hyperaccumulator. The declaration shows that amount of Ni recovered in Alyssum species increases as soil pH increases. The declaration also shows higher accumulation of Ni at soil pH values 7.60, 7.66, 7.34, and 7.30. However, the declaration does not provide data to support enablement of cobalt or manganese hyper-accumulation at the soil pH range as recited in the claims. Therefore, the rejection is proper.

Amending the claims to recite a Ni-hyperaccumulator and accumulation of Ni at a soil pH range that has support in the specification would obviate the rejection.

Remarks

Claims are deemed free of the prior art in view of the declarations under Rule 1.132 of Yin-MING of 02/13/03 and 12/08/03, as stated in the last Office action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Baker et al. (New Phyt. (1994), vol. 127, pp. 61-68. Baker et al teach accumulation of Mn in Thlaspi caerulescens from a culture solution containing Mn, wherein Mn concentration of 10,000 mg/kg of dry wt has been accumulated in plant tissues. Baker et al do not teach growing the plants in Mn containing soils.

No claim is allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Medina A. Ibrahim whose telephone number is (571) 272-0797. The Examiner can normally be reached Monday -Thursday from 8:00AM to 5:30PM and every other Friday from 9:00AM to 5:00 PM. Before and after final responses should be directed to fax nos. (703) 872-9306 and (703) 872-9307, respectively.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Anne Marie Grunberg, can be reached at (571) 272-0975.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Mai
4/27/06

MEDINA A. IBRAHIM
PRIMARY EXAMINER

